

REMARKS**Summary of Office Action**

Claims 1-21 are pending. Claims 10-21 were withdrawn from consideration as drawn to a non-elected invention.

Claims 1-9 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,124,725 to Sato ("Sato").

Applicants' Reply

Applicants respectfully traverse the prior art rejections of claims 1-9.

As noted in the previous Reply (dated June 7, 2005), applicants' invention relates to testing of motion-sensitive substrate elements (e.g., Micro-Electro-Mechanical Systems (MEMS) devices such as accelerometers used in automobile airbags). The elements of method claim 1 include (1) contacting the substrate with contact needles to measure electrical characteristics of substrate elements, and (2) accelerating the substrate during such measurement, which brings out motion-sensitive characteristics.

Applicants have further amended to claim 1 to emphasize these features of the invention.

Applicants again respectfully submit that Sato does not teach, show or suggest the elements of claim 1, namely (1) accelerating a substrate while in contact with the contact needles and/or (2) measuring the electrical characteristics of an accelerating substrate

In the Office Action, the Examiner notes that Sato's wafer testing apparatus 10 has a movable chuck 11, and a contactor 12/ probe terminals 12A. (See Office Action, page 3, ¶ 3). The Examiner correctly notes that the probe terminals 12A are brought in contact with

contact with electrode pads of chips formed on a wafer W placed on the main chuck during testing. However, the Examiner mistakenly concludes that “[t]herefore, Sato does show accelerating a substrate during measurement.”

Sato describes a conventional motorized X-Y-Z and Θ table for mechanically indexing or advancing the substrate. In particular, Sato describes a multi-probe contractor arrangement to “simultaneously” contact a plurality of semiconductor elements, and further a switching mechanism to sequence or alternate between reliability and electrical characteristic testing of the semiconductor elements. (See Sato Abstract).

Applicants note either type of testing - reliability and electrical characteristic testing, in Sato is conducted when the table, probes and wafer W are stationary. Sato calculates probe position co-ordinates and then uses the motorized X-Y-Z and Θ table only to geometrically align and position the semiconductor elements under the plurality of probes before contact. (See e.g., Sato col. 9 lines 5 -35) After horizontal alignment, “the main chuck 11 is brought to a halt.” (See col. 9 lines 21-24). Then, predetermined upward movement is controlled on the basis of calculated Z-coordinate values so that the probes contact the aligned semiconductor elements. (See col. 9 lines 21-24). All reliability and /or electrical testing are conducted while the main chuck 11 and wafer W are stationary. (See col. 9 line 36 - col. 4 line 29). Only after testing is completed, the main chuck is moved again. (See col. 4 lines 30-39).

Sato does not show, teach or suggest “mechanically accelerating the mounted semiconductor substrate while it is in contact with the contact needles” or “measuring the electrical characteristics of the circuit elements during the mechanical acceleration of the mounted semiconductor substrate while it is in contact with the contact needles” as required by applicants’ claim 1.

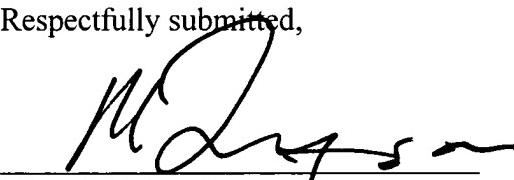
For at least the foregoing reasons, claim 1 and also dependent claims 2-9 are patentable over Sato.

Conclusion

Applicants respectfully submit that this application is now in condition for allowance. Reconsideration and prompt allowance of which are respectfully requested. If there are any remaining issues to be resolved, applicants respectfully request that the Examiner kindly contact the undersigned attorney for early resolution.

Respectfully submitted,

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